

Understanding Entries and Exits

We know the 3 parts of a trading strategy (entries, exits and position sizing) are related and should be seen as one unit. That said, we need to think about what do our entries and exits represent and how to design them. Before that, let's go through the concept of Expected Value.

Expected Value (EV) of an Action

The Expected Value is a useful concept for us to determine if we should undertake a course of action. It tells us the average returns we will receive on average for an action taken.

Expected Value of an Action =
Prob(Preferred Outcome) * Rewards(Preferred Outcome) – Prob(Undesired Outcome) * Losses(Undesired Outcome)

Where:

- Prob(Preferred Outcome) = Probability of preferred outcome occurring
- Rewards(Preferred Outcome) = Rewards if preferred outcome occurs
- Prob(Undesired Outcome) = Probability of undesired outcome occurring
- Losses (Undesired Outcome) = Losses if undesired outcome occurs

See these resources for more info:

https://en.wikipedia.org/wiki/Expected_value

Expected Value (EV) of a Trade

Similarly, the EV of a trade represents the returns we can expect to receive on average for this **one** trade.

Expected Value of a Trade =
Prob(Capture) * Rewards(Capture) – Prob(Fail to Capture) * Losses(Fail to Capture)

Where:

- Prob(Capture) = Probability of capturing the intended market inefficiency/Probability of a winning trade
- Rewards(Capture) = Rewards if we captured the intended market inefficiency/Winings from a winning trade
- Prob(Fail to Capture) = Probability of failure to capture the intended market inefficiency/Probability of a losing trade
- Losses (Fail to Capture) = Losses if we failed to capture the intended market inefficiency/Losses from a losing trade

See these resources for more info:

https://en.wikipedia.org/wiki/Expected_return

Entries

As a Rule of Thumb:

We enter a trade when

- there is an opportunity to capture our intended market inefficiency AND
- the expected value of the trade is positive (the more positive, the better)

It is difficult to determine the EV of the trade at this point. Thus, we rely on our market prudent approach to estimate the EV of the trade. This part is more art than science. You'll get better at this as you gain more experience.

To understand our market prudent approach, see the earlier lecture on "Strategy Creation Thought Process". In short, we pick entry rules that are appropriate for the intended market inefficiency we want to capture. This approach should maximise the EV of the trade. Don't worry about making it perfect for now, we will refine these rules in our backtest and optimisation segment.

FAQ: Why don't we use backtest results to estimate the EV of a trade?

Answer:

- Firstly, the past does not predict the future. Even if the backtest results are positive, it does not always mean the EV of the **next/future** trade(s) will be positive.
- Secondly, even if the backtest results are positive, it may not mean we have captured our intended market inefficiency. It just means we have captured some sort of inefficiency in that particular backtest period.

We will look into these concepts in the backtesting and optimisation chapter.

Exits

As a Rule of Thumb:

We exit a trade when

- the intended market inefficiency we want to capture no longer exists AND
- expected value of staying in the trade is negative

Similarly, we rely on our market prudent approach for the design of the exit rules.